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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,480	07/24/2003	Thangavelu Asokan	130507-1	4218

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER

AFTERGUT, JEFF H

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/627,480

Applicant(s)

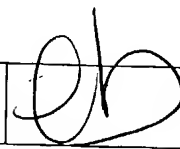
ASOKAN ET AL.

Examiner

Jeff H. Aftergut

Art Unit

1733



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-36 and 38 is/are pending in the application.
- 4a) Of the above claim(s) 35, 36 and 38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1-9 and 2-24-04.
- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. herewith.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election with traverse of Group II in the reply filed on 7-7-04 is acknowledged. The traversal is on the ground(s) that the difference between the independent claim of Group II and that of Group III is only a matter of scope and required an additional step and the inventions are clearly related inventions (note that the previous examiner indicated that the relationship between the inventions was as unrelated inventions). This is not found persuasive because as set forth herein, the relationship between the two groups of claims is really one of intermediate and final product. It should be noted that the method of Group II could be used to make an intermediate product which did not incorporate the final step of compacting the preformed winding of magnetic wire with a plurality of ferromagnetic particles as defined and therein the performed winding as defined in claim 23 was used as a winding of a stator as formed subsequent to the curing of the resin in the assembly (i.e. the perform was the final form of the winding used in the assembly). It should be noted that there is no requirement with any of the dependent claims which depend from claim 23 which requires that one perform the additional step of introduction of the ferromagnetic particles into the assembly. As such there is no linking claim and applicant is advised that the originally filed claims evidence that there are two separate and distinct inventions being claimed. It should be noted that a previous phone conversation with examiner Nguyen indicated that claim 35 is also being withdrawn from consideration as being directed to a non-elected invention (the article of manufacture).

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 23-25 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent 56-145740.

Japanese Patent '740 suggested (as evidenced by the abstract of the Japanese Patent), that it was known at the time the invention was made to form an insulated winding for a rotary machine (a rotor or stator) by winding a heat resistant insulating tape of glass fibre about the windings. Following the application of the heat resistant insulating tape, the reference suggested that one would have applied a heat resistant porous insulating tape of consisting of composite mica material about the electrically insulating backing material of glass fibre. The reference suggested that the assembly was coated with a solventless polyimide resin and that the final assembly was cured.

With regard to claim 24, note that the heat resistant insulating tape defined in the abstract is formed from glass fibre. Regarding claim 25, note that the tape of glass fiber was wound about the wires as defined. Regarding claim 32, note that the polyimide resin was cured (cross-linked).

4. Claims 23, 24, 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Lewis et al '302.

Lewis et al '302 suggested that it was known at the time the invention was made to form a insulated conductor for a stator or rotor by applying the conductors a glass fiber tape to the same followed by the application of a mica tape. See column 6, lines 5-24. the assembly was then impregnated with a silicone resin impregnated material which was subsequently cured.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 23-28 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 56-145740 in view of Schulman et al '417.

Japanese Patent '740 suggested (as evidenced by the abstract of the Japanese Patent), that it was known at the time the invention was made to form an insulated winding for a rotary machine (a rotor or stator) by winding a heat resistant insulating tape of glass fibre about the windings. Following the application of the heat resistant insulating tape, the reference suggested that one would have applied a heat resistant porous insulating tape of consisting of composite mica material about the electrically insulating backing material of glass fibre. The reference suggested that the assembly was coated with a solventless polyimide resin and that the final assembly was cured.

The reference failed to teach the specific thickness of the composite mica tape applied as well as the degree of overlap in the wound mica tape. The reference additionally failed to suggest that the composite mica tape included a binder therein (an adhesive).

However, in the art of manufacturing a winding for a slot of a rotor or a stator, it was known at the time the invention was made to incorporate a mica composite tape which included an adhesive therein and which was wound in overlapping fashion about a glass fiber insulation layer of a wire assembly as suggested by Schulman et al '417. More specifically, Schulman et al '417 suggested that it was known at the time the invention was made to provide the composite tape with a thickness of 5 mils (column 4, line 60-67) wherein the tape is applied in an overlapping fashion, column 4, lines 56-60. the applicant is advised that the reference additionally suggested that the composite mica tape was applied upon an insulating layer of glass fiber which was disposed in the wire. Additionally, the composite mica tape would have had an adhesive therein. It should be noted that while the reference to Schulman et al '417 did not expressly state that the overlap was 10-90% in the winding, such would have been determined through routine experimentation depending upon the desired final properties of the finished assembly and one skilled in the art at the time the invention was made would have understood that overlapping the mica tape would have incorporated an overlap of 10-90%. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the mica tape of Schulman et al '417 in the insulated wire assembly of Japanese Patent 56-145740 as such was suggested by the reference

as useful in the wound assembly and one skilled in the art would have been expected to employ conventional composite mica tapes in the operation.

7. Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 56-145740 in view of Rogers, Jr '150.

The reference to Japanese Patent '740 suggested that those skilled in the art at the time the invention was made would have wound a mica tape upon the glass fiber insulating layer previously wound about the wire core, however there is no indication that one skilled in the art would have formed the composite mica tape from a combination of mica and glass fibers. Additionally, there is no indication that one skilled in the art at the time the invention was made would have incorporated a polymer film between the glass insulation and the mica tape. However, it was known at the time the invention was made to form the mica insulation for an electrical coil from a combination of glass fabric and mica material as suggested by Rogers, Jr. '150. More specifically, layer 10 was stated to be a glass fabric layer and layer 12 was the mica insulation layer useful for the mica tape which was to be wound about the electrical coil. The reference additionally suggested that instead of incorporation of the glass fabric material 10 one skilled in the art at the time the invention was made would have understood that polyethylene glycol terephthalate films would have been a suitable substitute for the same, see column 6, lines 5-10. When polyethylene glycol terephthalate films were used as an alternative to the glass then one would have understood that the films 10 would have been disposed between the mica sheet material and the glass fiber layer which was previously wound on the core in Japanese Patent '740. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to employ a mica tape such as that of Rogers, Jr. '140 in the operation of Japanese Patent '740 to form an electrical coil assembly.

8. Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 56-145740 in view of Lewis et al '302.

The reference to Japanese Patent '740 suggested that one skilled in the art at the time the invention was made would have incorporated a cross linking coating about the assembly which was cured after application, however the reference did not expressly suggest that a silicone coating would have been applied. Additionally, the reference did not express that one skilled in the art would have applied the coating according to the techniques defined in the claims. The applicant is advised, however, that the use of a silicone coating was known in the art of manufacturing a coil wherein the final coating was applied by dipping in a vacuum in order to vacuum impregnate the assembly with the resin as suggested by Lewis et al '302. applicant is referred to the discussion of Lewis et al '302 above. It should be noted that the coating applied in Lewis et al '302 was a silicone resin coating. Additionally, while the reference did not express the thickness of the coating applied, one skilled in the art would have been expected to determine such through routine experimentation and it would have been within the purview of one having ordinary skill to do the same in order to attain the desired properties in the finished assembly without using excess resin. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ


the cross-linking resin of Lewis et al '302 in the operation of making the coil assembly of Japanese Patent 56-145740.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on 571-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jeff H. Aftergut
Primary Examiner
Art Unit 1733

JHA
August 31, 2004